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DEVELOPMENT OF OVERALL NATIONAL STATISTICAL CAPABILITIES

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DEVELOPMENT OF OVERALL NATIONAL STATISTICAL CAPABILITIES, INCLUDING ACTIVITIES RELATED TO NHSCP

Note by the secretariat

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INTRODUCTION

1. Three primary sources of statistics are administrative records, establishments and households. All three have to be tapped to build up statistics for use in administration, policy formulation, planning and research. Data based on administrative records are generated through the administrative process itself, whereas census and survey techniques are employed for collecting data from establishments and households. The process of building up the statistics needs planning, programming and allocation of resources, the objective being to develop a durable capability for collection, processing, analysis and dissemination of all kinds of statistics and statistical services to cater to the needs of all kinds of users. This in essence is the development of overall national statistical capability.

2. The development of that capability is a dynamic process. There has to be augmentation and upgrading of manpower resources in keeping with ever-increasing demands for more and more statistics covering new fields; physical resources need continuous replenishment and modernization to keep in step with technological advances; and organizational infrastructure needs strengthening all the time to enable statistical agencies to render the proper user services. Within the ESCAP region, a few countries have already attained a high degree of capability and self-sustained growth, some have acquired a moderate level of capability but need further development, and others are in the earlier stages of developing their national statistical capabilities.

3. Work is going on at national, regional and international levels to develop overall national statistical capabilities in this region. Many problems - organizational and technical - have come to light. In this paper some of these problems in a few selected areas are discussed so that ways can be found to accelerate the process of developing overall national statistical capability.

A. NATIONAL HOUSEHOLD SURVEY CAPABILITY PROGRAMME

4. After a period of preparatory work, NHSCP was formally inaugurated in 1979 as a global project of the entire United Nations family to help interested developing countries. Its aim is to build up enduring national instruments and skills so as to conduct continuing and integrated household sample surveys for the collection of socio-economic

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and demographic data. NHSCP is a data-collecting as well as a capability-building programme, the two being interrelated and complementary.

5. NHSCP is primarily implemented through country projects, which spell out in detail the proposed national survey programme, the infrastructure to be created or strengthened, the time-frame and the commitments of the national Governments and aid agencies in executing the projects. The statistical divisions of the regional commissions (ESCAP for the Asian and Pacific region) act as short-term technical advisory resource centres for NHSCP and co-ordinate the Programme at the regional level. The specialized agencies and bodies of the United Nations such as the United Nations Children's Fund (UNICEF), the United Nations Fund for Population Activities (UNFPA), the International Labour Organisation (ILO), the Food and Agriculture Organization of the United Nations (FAO), the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the World Health Organization (WHO) provide expert assistance in their respective fields through various arrangements. A Central Co-ordinating Unit in the United Nations Statistical Office is responsible for overall promotion, management and co-ordination of the programme.

6. In this region six countries are now operationally participating in NHSCP: Bangladesh, Mongolia, Pakistan, Samoa, Sri Lanka and Thailand. Bangladesh and Pakistan joined recently, in 1985. Sri Lanka and Thailand were the earliest participants, while six years after the initiation of the Programme, only six countries in this region are participating in it. This cannot be regarded as a satisfactory record of progress because it is known that many more countries in the region need to develop their household survey capability and through it their overall national statistical capability. It is difficult to reconcile this low participation rate with the general approval and support which NHSCP has been receiving from countries in various meetings and conferences. There have without doubt been certain constraints and impediments in the implementation of NHSCP and perhaps there is some inhibition on the part of countries to join it. Uncertainties about the availability of external aid for the survey programme and the long and tortuous process of negotiations with external donors for this purpose may have dampened the interest of countries in joining the NHSCP. Some of these problems are discussed in the following paragraphs, and the Committee is invited to consider and suggest ways by which NHSCP can be made more effective in this region.

7. The central issue in the implementation of NHSCP by the countries is the availability of funds. Household surveys are costly and when capability is required to be built simultaneously, a good deal of initial investment in personnel, material and infrastructural development becomes essential. It is well known that NHSCP has no funds of its own but the Central Co-ordinating Unit and the regional commission concerned attempt to help countries to mobilize the funds. In order to execute a national programme of household surveys, funds have to come from two sources: the Government and external donors. From the experience of some 23 countries participating in NHSCP all over the world, 75 per cent of funds come from the Government and the rest from external donors. The average assistance per country from external donors works out at $US 1,128,000 over a period of four to six years.

8. Whether government funds or external aid are involved, the key to the mobilization of resources is the emphasis and priority which the Government places on the survey programme. This is obvious for the allocation of Government funds, but requires some explanation in the case of external aid. External donors generally have a country programme budget which is a development aid budget for the country as a whole. Foreign assistance sought by a Government for any project, including a project for a survey programme, has to come from this budget. It is seldom that external donors provide separate funds for the survey programme over and above what is provided for in their country programme budget. Therefore, a survey programme project has to compete with many other projects, which are often of a more pressing, visible or otherwise "saleable" nature in the eyes of external donors - who will tend to have their own development aid priorities. It is clear, therefore, that a project for a survey programme will attract foreign aid only if the Government concerned places a very high priority on it.

9. It is for the national statistical office to ensure that the survey programme receives a sufficiently high priority of Government for funding purposes. The Central Co-ordinating Unit and the regional commission concerned can only act as catalysts in the whole process, particularly in identifying prospective donors and canvassing their support. The general experience is that where the national statistical office has been able to exert sufficient influence on the Government, mobilization of resources has been relatively easy. The questions which

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arise are why national statistical offices are often unable to obtain a high priority for the survey programme from their respective Governments, and what can be done to remove this primary hurdle. The status of the national statistical office is an important factor. The office should be in a position to make more prominent and determined efforts to advance the course of statistics development. The Central Co-ordinating Unit and the regional commission have been attempting to play a supportive role in these efforts by continually reminding the donors and the Governments about the importance of statistics.

10. The external aid component of the project is screened through several stages. First of all, potential donors have to be identified and here the Central Co-ordinating Unit can help through its standing liaison arrangements with most of the donors. Then the proposals have to be channelled to the country representatives of the potential donors through the appropriate department of government located variously in the ministries of planning, finance or foreign affairs. This is where the priority accorded by government to the survey programme project counts, because it has to compete with other projects requiring external assistance. Once this stage is passed, details of the assistance required have to be negotiated with the country representative(s) of the external donor(s), and a project agreement finalized. Next, the country representative(s) of the external donor arranges for the delivery of assistance in consultation with its headquarters. All these stages are time-consuming and there are uncertainties involved at every stage. This, however, is the normal process for receiving external aid, and the national statistical agency has to make the best of the situation through constant perseverance and vigilance. A considerable amount of paperwork is also involved in preparing project documents for external assistance and revising them from time to time according to ongoing negotiations. The Central Co-ordinating Unit and the regional commission are prepared to assist the national statistical agency in this work, and in most cases have drawn up the original project document in the format required by potential donors.

11. Sometimes it may not be possible to obtain all the required external resources for the survey programme from just one donor. In such a case the external aid requirements of the project proposals can be split into parts and submitted to several potential donors. The resources

obtained from more than one donor can then be pooled for the implementation of the survey programme. Co-ordination in such a case can be effected through the local UNDP office if the donors and the Government agree. Otherwise, the Central Co-ordinating Unit can make other suitable arrangements in consultation with the Government and the donors concerned. In several countries such pooling of resources from different donors has already been put into effect.

12. Another point in this connection is that a survey programme more readily attracts external aid if it is already operational. Therefore, it may be a good strategy for national statistical offices to start the survey programme - even on a modest scale - with whatever internal and external resources are readily available. They can simultaneously pursue efforts to secure additional resources and expand the programme when total requirements become available. In this case the project proposals for the survey programme can be prepared in two parts - the first to show operational plans and budget on the basis of readily available resources, and the second the desired programme and its budget with an indication of what additional inputs are required from Government and external donors respectively.

13. Some countries may be under the impression that NHSCP is intended only for countries which have practically no capability in survey-taking. This is not correct because, as mentioned earlier, the development of national statistical capability is a continuous and dynamic process requiring fresh inputs until the point of self-sustained growth is reached. Many countries in Asia have acquired reasonable capability and have established their own ongoing household survey programmes. They may seek further improvement of their capabilities through NHSCP, as a few have already done. Improvements sought may be on specific aspects of a survey programme, such as development of an integrated system of surveys, adoption of master sample systems, improvement of sample design, expansion of samples, improved cartography, reorientation of the conceptual framework, extension to new subject fields, addition of new equipment, modernization of data processing or printing facilities, analytical studies, staff development, etc. While the external aid needed in such cases may be marginal, being confined to specific items such as hardware, software, technical assistance, consultancy or training facilities, the benefits to the country survey

programme can be substantial. Developing countries which now have ongoing survey programmes outside NHSCP may consider joining the Programme on this basis. Their participation will also enrich NHSCP by making it possible to have wider arrangements for TCDC (technical co-operation among developing countries).

14. The present unsettled conditions in some countries in Asia may preclude the conduct of household surveys on a national scale. If the countries so desire, they may consider joining NHSCP through, for example, limited programmes of surveys in unaffected areas or with training and other capability-building measures which in due course can be expanded into full-fledged programmes, as discussed in paragraph 12. It is desirable to make a start as early as possible, because capability building is a long process.

15. The Pacific developing countries have a different set of problems. With their small population, household surveys are not as cost-effective as elsewhere and with their limited resources, the conduct of such surveys on a continuing basis may not be feasible in the smaller countries. A subregional household survey capability programme seems to be more appropriate. FAO is currently considering such a project for the development of agricultural and related statistics covering the Cook Islands, Fiji, Samoa, Solomon Islands, Tonga and Vanuatu. ESCAP intends to collaborate with this project to introduce an overall household survey capability programme for the subregion which will benefit the Pacific countries. The secretariat is also pursuing its efforts to create a Pacific subregional NHSCP team based at the ESCAP Pacific Operations Centre (EPOC) particularly through the proposed post of a data processing adviser.

16. One of the ways in which ESCAP has been trying to promote NHSCP in the region is by arranging seminars and expert group meetings which enable countries to exchange information and experiences on statistics development and survey methodology more frequently. With this end in view, and in accordance with the suggestions of the Commission and the Committee on Statistics at earlier sessions, the Statistics Division of ESCAP has formulated proposals for, among others, the following technical meetings:

(a) Expert Group Meeting on Developing Statistics of Household Economic Activities

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(b) Expert Group Meeting of Producers and Users of Statistics

(c) Seminar on Design and Evaluation of Household Sample Surveys

(d) Seminar on Statistics of Poverty and Income Distribution

(e) Seminar on Employment and Unemployment Statistics

(f) Pacific Subregional Seminar on Social and Related Statistics

The Expert Group Meeting on Developing Statistics of Household Economic Activities took place in September 1985, using UNDP programme support to SIAP; its report is before the Committee in document E/ESCAP/STAT.6/12. However, the constraints regarding resources already mentioned in the context of national survey programmes exist at the regional level too, and for the other meetings listed the funding position is still uncertain.

17. The same difficulty is being faced in strengthening the technical advisory services at regional and subregional levels for more effective implementation of NHSCP. The Statistics Division of ESCAP has identified a number of areas in which work would directly or indirectly support NHSCP, and has drawn up proposals for the following:

(a) Adviser on data processing for the NHSCP in the Pacific

(b) Regional adviser on sampling and survey methodology

(c) Development of social statistics through advisory services

(d) Regional adviser on cartography

(e) Regional adviser on migration statistics

While some of these proposals were submitted recently, others have been awaiting funding support for well over a year.

18. The ESCAP Commission, at its forty-first session held in March 1985, requested international agencies and bilateral donors to continue their generous support to NHSCP. The same sentiment was expressed by the United Nations Statistical Commission at its twenty-third session held in February-March 1985, which in addition made the following two specific suggestions:

(a) Donor agencies might earmark a small percentage of development aid for the promotion of data collection and the building up of the necessary infrastructure and skills, and arrange, in consultation with national authorities, for funds to be effectively used in building up statistical capabilities;

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(b) In view of the advantage of an integrated approach to data collection and use, donor agencies should, as far as possible, avoid the funding of ad hoc surveys to meet special needs.

The Committee may wish to comment on these two suggestions of the United Nations Statistical Commission. ESCAP intends to bear suggestion (b) in mind when assigning priority in the provision of regional advisory services in household surveys.

19. A global evaluation of the NHSCP under the auspices of the NHSCP Programme Review Committee is now in progress. The evaluation is being carried out by a team of three independent experts. The team is reviewing the progress made in implementing NHSCP and its overall impact in strengthening survey capability and data availability to the users. The members of the team will visit some of the countries participating in NHSCP in order to make an in-depth study of the problems and achievements. On the basis of their study, the evaluation team will recommend measures for possible improvements in the strategy and implementation of NHSCP. The deliberations of the Committee on Statistics on this subject will, therefore, be of great interest to the evaluation team. A further oral report on the progress of this evaluation will be given to the Committee.

B. NHSCP TRAINING PROGRAMME IN INDIA

20. The role of training in the development of overall national statistical capabilities is vital. Training has to be directed to the development of technical skills at all levels and also to management skills at higher levels. A substantial contribution is being made in this field by the Statistical Institute for Asia and the Pacific (SIAP); a report on the activities of the Institute is submitted in E/ESCAP/STAT.6/6. In the following paragraphs a special training programme organized in India since 1982 under the auspices of NHSCP is discussed.

21. The NHSCP training programme in India has been organized by ESCAP in collaboration with the Government of India and with financial assistance from UNDP. Its objective is to help countries of the region in having their statistical staff trained in household survey methodology and electronic data processing. The project tries to utilize regional

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expertise, in particular the long experience of the Indian statistical authorities, as part of efforts to build up TCDC. The centre for the training is located at the Central Statistical Organisation, New Delhi.

22. Details of the courses conducted so far under this programme are given below:

Subject-matter	Duration	Number of participants	Number of participating countries
Sampling and survey methodology	30 December 1982-4 May 1983	20	14
Electronic data processing	20 July-18 November 1983	13	10
Sampling and survey methodology	6 August 23 November 1984	18	14
Electronic data processing	5 August 22 November 1985	15	10

The 66 participants trained to date have been drawn from 20 countries of the region.

23. The project as originally envisaged was to comprise two courses annually over a two-year period, but the time-frame for the four courses was subsequently extended up to the end of 1985. After the first and second courses, an evaluation questionnaire was addressed to all the participants and their supervisors. Some useful suggestions were received and on the whole there was a strong desire for the continuation of the project. A tripatite review of the project was held in June 1984 and attended by representatives of the Central Statistical Organization of India, ESCAP and UNDP, New Delhi. In sending their comments on the project to the tripartite review, Governments of the region not only commended the progress of the project but in some cases specifically recommended its extension. The tripartite review consequently recommended that the project be continued for a further period of two years subject to the availability of funds. ESCAP has accordingly submitted a revised project proposal to UNDP for an extension of this regional project by another two years, that is, until the end of 1987.

24. The revised project proposal envisages that the training programme will continue to be held at the Central Statistical Organisation in New Delhi. Facilities for this purpose have already been

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established there and the Organisation has gained much experience in conducting the courses. During both 1986 and 1987 two courses of 16-week duration are planned - one on sampling and household survey methodology with emphasis on field work, and the other on electronic processing of data collected in household surveys. Each course will train about 18 persons. The selection of participants will be made by the Statistics Division of ESCAP and special attention will be paid to the needs of the least developed, land-locked and island developing countries of the region.

25. The curricula for the courses, time schedule for lectures and the selection of lecturers will be worked out by the Central Statistical Organisation in consultation with the Statistics Division of ESCAP, keeping in view the needs of the participating countries. The lecturers will be drawn mostly from the host country; however, efforts will be made to enhance the TCDC element of the project by obtaining the services of resource persons from other developing countries of the region. Some special lectures will be delivered by the regional advisers and other statistical and data processing staff of ESCAP. The expertise of the staff of the United Nations Statistical Office, particularly of the NHSCP Central Co-ordinating Unit, will also be available as and when convenient during their missions to the region.

26. The proposed courses will be complementary to those offered by SIAP. They will provide training in general aspects of household sample surveys and related data processing, whereas the SIAP advanced courses will take up more specialized and in-depth training on particular phases of surveys, for example, on planning, execution, evaluation and analytical techniques, and on specific subject-matter surveys.

27. With the aim of promoting TCDC in statistical development between the developing countries of Asia and the Pacific and those of West Asia and Africa, trainees from these regions may be included in the courses, provided training opportunities for countries in the ESCAP region are not adversely affected, class sizes do not grow too large and there is no additional financial burden on the project. There will be continuing evaluation exercises to improve the technical and organizational arrangements for the training programme.

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28. The Committee may wish to express its gratitude to UNDP and the Government of India for making this series of training courses possible. It may also wish to support the proposal for the extension of the project, and offer its comments and suggestions for improvement in the courses. At present, the NHSCP-related training needs of the region seem to be adequately served by the project. If, however, more countries join NHSCP in the future and there are greater demands for such practical training, the question of opening a second regional course of training in another developing country might be considered. The views of the Committee on this matter are solicited.

C. DIALOGUE BETWEEN PRODUCERS AND USERS OF STATISTICS

29. A system of continuing dialogue between producers and users of statistics is a necessary step for developing overall national statistical capabilities. All statistics are meant to be used and a large impact on the development of statistics must come from the users. Producers and users of statistics fall into two different categories, but in many instances the roles are combined or reversible. In general, producers of statistics are the statistical agencies primarily engaged in the collection, collation, analysis and dissemination of data. Users of statistics are the planners, policy makers and administrators in Government or parastatal agencies, local authorities, private business, industry associations, trade unions, and so on; researchers in universities and educational institutions; and private individuals. Producers of statistics should know the end-uses of data, the purposes for which they are needed and the nature of decisions likely to be based on them, so that they can plan and design efficiently the operations leading to the final presentation of statistics. Users of statistics have to know the source, scope and coverage of the statistics and their limitations and pitfalls, so that they can apply the statistics correctly to the problems at hand. Therefore, there is a common meeting ground between producers and users of statistics and the two must influence each other strongly to bring about the development of national statistics and statistical capabilities.

30. In actual practice, a gap is often found to exist between producers and users of data, particularly in the early stages of statistical development. Producers complain that when approached, users

are unable to indicate their exact requirements or specify clearly the purposes for which the statistics are required, and that statistics produced at great cost and effort are often unutilized or under-utilized. The users complain that statistics of the particular kind needed by them are often not available, the details presented do not suit their purpose, there is too great a time-lag in the production of data, and often the statistics are of poor quality and unusable for problem-solving and decision-making purposes. Some of the complaints on both sides may be genuine and underline the need for an effective interface between producers and users of statistics.

31. In the early stages of development, producers of statistics often have to anticipate the requirements of users following their own predilections, analogies with more developed countries, and international recommendations. To some extent this is unavoidable but if the statisticians do not check their plans and programmes with national users, the priorities, procedures and techniques may deviate from what is appropriate in the national context. The danger comes from the tendency of producers to operate on their own. On the other hand, users of statistics must become seriously involved in the attempts being made by producers to develop national statistics and statistical capabilities. They should take pains to outline their requirements as precisely as possible, examine critically the plans and programmes prepared by producers from a user standpoint, try to appreciate the constraints under which producers have to work and assist in the development process not only with ideas but also with resources, wherever possible; users sometimes do not fully appreciate the considerable costs involved in collecting information. The tendency on the part of users to sit back, wait for the statistics to be produced and then criticize them is not conducive to healthy development.

32. There is considerable debate as to how far the statisticians of producer agencies should go with their analysis and interpretation of data. Clearly they should avoid encroaching uninvited on the domains of users, but at the same time they should try to pass on to users the benefit of the statistical discipline and of the statistician's knowledge of the basic data and their limitations. Statisticians must, if they can, assist users in avoiding the drawing of conclusions which are unwarranted or unsubstantiated by the data. It has to be kept in view in

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this connection that users may be many and their needs diverse. It is convenient to distinguish between two major types of users, namely, those with a good knowledge and understanding of statistics and statistical tools for analytical purposes, and those with a weak background of statistics, including the lay public. The former require very detailed statistics - not only aggregates but also distributions, averages and other derivative measures - and full technical documentation of methods used and quality of results obtained. The latter need a set of basic tables with important results summarized in words together with a presentation of techniques, including quality assessment, in a language which is simple, clear and easily understood. Both these requirements have to be borne in mind in the presentation of statistics.

33. The minimum requirement is that for any statistics published, there should be a clear and precise indication of the quality to guide the users in correct application of the statistics. By way of illustration, the main topics, with brief annotation, included in a set of draft guidelines for quality presentation for general users of statistics, as considered by the Conference of European Statisticians, November 1983, are presented below:

(a) Data source and definitions (method of data collection, time-period, concepts, definitions).

(b) Coverage of the data (census of sample, quality of frame, coverage errors).

(c) Field procedures, survey design and estimation methods (essential aspects and factors affecting results).

(d) Response rates (measures, if any, for compensation or adjustment for non-response).

(e) Sampling errors (as far as possible quantitative estimates like standard deviations or confidence intervals).

(f) Major types of errors (size and direction, relative importance and impact on results).

(g) Comparability over time (factors affecting comparability).

(h) Comparability with other statistics (possible difficulties).

(i) Availability of supplementary information relating to quality (references to other material or publications).

34. The need for closer co-operation and greater understanding between producers and users of statistics was discussed at the international level by the United Nations Statistical Commission at its twenty-first session in 1981 and also at its twenty-third session in 1985. At the regional level, the ESCAP Committee on Statistics, at its fourth session held in June 1981, endorsed the idea of holding a high-level expert group meeting of producers and users of statistics to discuss the issues involved and recommend solutions. The ESCAP Commission at its fortieth session held in April 1984, strongly supported the idea, but owing to funding difficulties it was not possible to hold the expert group meeting. At its forty-first session, the Commission reiterated its strong support for the meeting and urged the secretariat to seek the necessary financial support. The Statistics Division accordingly resubmitted a proposal to hold the expert group meeting in 1986, depending on the availability of funds. The ESCAP Project Review Committee, in generally considering the project for extrabudgetary funding, suggested that the secretariat's initial role should be to arrange meetings between producers and users of statistics at the national level, especially in countries which desired such meetings. The Committee also suggested that the funds required to convene those meetings might come from each country's UNDP assistance. A regional expert group meeting could perhaps follow at a later stage. The Committee's views on this rather new approach are specifically invited.

35. In the final analysis, action to promote an effective dialogue between producers and users of statistics rests at the national level. An institutional framework, such as a high-level committee of producers and users, to screen, review and monitor statistics development plans with smaller sub-committees or technical working groups to look into specific problems, is an essential step. However, unless such an institutional framework is enthusiastically supported and serviced by the national statistical agency on a regular basis, it is likely to fall into disuse. Effective publicity for statistical activities being undertaken is another way of establishing links between producers and users of statistics. Standard publicity campaigns for censuses and surveys have the limited objective of securing the co-operation of respondents. They should be viewed in the wider perspective of generating interest among users, including the general public, and making them better informed about ongoing statistical activities and the likely products. This is

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necessary because the totality of users of statistics is often not known and cannot be easily identified. Arranging periodic national seminars, with the participation of users, on census and survey programmes and results is also extremely useful in establishing a good rapport among producers and users of statistics. Here the approach can be more technical. The producer agencies may submit papers on methodology, content and results of censuses and surveys with an explanation of the rationale and the critical factors. The users may be called upon to discuss the papers from their own angle, that is, the purposes for which they require the statistics, to what extent the statistics are able to meet their requirements and what they think should be done to make the statistics more user-oriented.

D. COMPUTER TECHNOLOGY

36. Development of overall national statistical capabilities should ensure that there is a smooth and regulated flow of work from planning and design to data collection, data processing, data analysis and finally to dissemination of statistics. A delay at any of the intermediate stages means that the final output of statistics is held up, affecting much of their usefulness. In this process, data processing is found to be a vulnerable intermediate stage with the volume of data collection often far outrunning the capacity for data processing. Without doubt there have been tremendous technological advances in the field of data processing during the last three decades, but adaptation of the latest technology to the conditions of developing countries continues to pose problems. An interesting development in this regard is that the Economic Commission for Europe (ECE) is executing an UNDP-funded project on statistical computing, the objective of which is to transfer the output of software development activities to developing countries. This project is described in document E/ESCAP/STAT.6/5, which is before the Committee.

37. Many of the larger developing countries have well-established mainframe computer facilities, although their location in some instances outside the national statistical office has created difficulties. A shortage of qualified and trained manpower and the communication gap between subject-matter statisticians and computer personnel are among other problems being encountered. Data entry remains a bottle-neck in some countries. While the smaller countries would also like to acquire

powerful electronic data processing equipment, the problems of physical, financial and manpower resources are more acute in those countries. Overall, the expected quantum leap in reducing the time taken for processing large volumes of data with the help of computers has not yet taken place in most developing countries. At the same time, data collection activities have been increasing by leaps and bounds.

38. The recent advent of micro and personal computers has opened up new possibilities, although mainframe computers will still be needed for handling large volumes of data collected, say, in population censuses. Micro and personal computers can take over all the tasks, for example, data entry, edit, processing, analysis, report-writing and printing, for a relatively small survey or mini-census. They can be used for decentralization of some of the tasks for larger surveys or censuses. They can be linked to mainframes for performing supplementary tasks. Also, with a little training, statisticians can handle micro and personal computers independently at their own desks. Thus, micro and personal computers have several advantages, and for smaller countries they often provide a viable alternative to mainframe computers.

39. Hardware (micro and personal computers) based on microprocessor technology is now available at a relatively low cost. Furthermore, costs are expected to continue to decline in the foreseeable future. On the other hand, the development of software programmes is rapidly becoming more expensive. Software is becoming by far the larger cost component of computer systems, a trend benefiting those developing countries with sufficient skills in software development.

40. Among major difficulties in the introduction of microcomputers, there are at present numerous manufacturers and vendors of this type of equipment, even with the recent shake-out in the market. Most of them do not offer maintenance, training and support facilities, particularly in smaller countries. Development of statistical software has lagged behind and available software is often compatible with only a limited number of the numerous brands of machine in the market. However, a number of suitable software packages for statistical applications are currently being developed in the United Kingdom of Great Britain and Northern Ireland, the United States of America, and elsewhere.

41. Taking into account problems such as these, the Commission at its forty-first session agreed with the secretariat on the need for a

rational approach to the selection and utilization of microcomputers. It also recognized that, individually, many developing countries of the region lacked the resources to benefit effectively from the fast-evolving microcomputer technology. The Commission thus endorsed a regional approach through, for example, a programme offering training and support to managers, computer users, programmers and service technicians from national statistical offices. Such a programme would involve information clearing-house and limited software development activities for microcomputers.

42. Following the recommendations of the Commission, the Statistics Division of ESCAP has submitted a proposal for a regional computer training programme in statistics as a potential project topic for the fourth UNDP programming cycle starting in 1987. The proposal envisages four training seminars for managers and senior statisticians, and six training courses for EDP personnel and statisticians during the period 1987-1990, using the facilities available at the Regional Computer Centre of the Asian Institute of Technology (AIT) near Bangkok. The proposal also envisages the setting up of a regional clearing-house for the promotion of transfer of scientific knowledge and technology on the statistical application of computers, especially microcomputers.

43. As mentioned earlier, the Statistics Division of ESCAP is pursuing proposals for strengthening the advisory services for the Pacific subregion by the addition of a data processing adviser at EPOC. This adviser is expected to attend to the special and immediate problems in data processing and computer training for countries in the Pacific subregion particularly in connection with the processing of household surveys. While unfortunately it has not been possible to obtain funding for this post so far efforts are continuing.

44. Through these and other steps, such as the continuation of the NHSCP-related EDP training courses in New Delhi and the SIAP data processing courses, the secretariat has planned a series of programmes for the development of national capabilities in statistical computing in the region. The implementation of the programmes will depend on the availability of funds. The Committee may wish to review the overall situation and indicate its views and suggestions.

E. TIMELY DISSEMINATION OF STATISTICS

45. The United Nations Statistical Commission, at its twenty-third session held in February-March 1985, considered the following issues in regard to the dissemination of statistics: (a) meeting user needs for, and improving the dissemination of, international statistics; and (b) publication policy for statistics.

While the discussions in that session were mainly in the international context, the issues are highly relevant at the national level where the primary statistics are generated. Therefore, the two basic ideas, that statistics should be available with a minimum time-lag and that they should be directed towards meeting the needs of users, are discussed in this section in the national context. The publication policy for regional statistics is the subject of a separate document, E/ESCAP/STAT.6/19.

46. There are various ways of disseminating statistics, for example, through printed publications, computer print-outs, microfilms and microfiche, computer-readable media, such as magnetic tapes or floppy discs, and direct electronic access to information held on a computer base. For most developing countries of the region, the conventional printed publication remains the typical means of dissemination, although the utilization of other media is rapidly increasing. For maximum effect and benefit to users, statistics need to be made available as quickly as possible, that is, as close as possible to the reference period. This means that the data, after processing and tabulation, should be analysed and prepared for presentation in the form of tables and narratives, according to plans already prepared for the purpose, for publication as expeditiously as possible.

47. Plans and arrangements for analysis and presentation of statistics should be laid much in advance to avoid delays in the dissemination of statistics. In fact, they should be prepared even at the stage of planning for data collection, and taken into account in the design of schedules and questionnaires. Further, the plans should be based on the needs of the users, and very often on an anticipation of the needs. In most developing countries, the capabilities of users in applying the statistics to practical problems are also in the process of development. Therefore, statisticians connected with the production of data have to assume greater responsibility in their analysis and presentation.

48. Keeping all the requirements in view, it is clear that timely dissemination of statistics is a manifold task. Timeliness and content are both important, and so are numbers and words. In this context, possibilities for producing preliminary or provisional statistics before final results become available, releasing important statistics before more detailed tabulations are produced, or publication of basic tables with explanatory notes before analysis of the data is completed, have to be carefully considered in the situation prevailing in each country. Sometimes dissemination of statistics, particularly relating to surveys, is inordinately delayed because everything, that is, background, objectives, methodology, quality assessment, tables, analysis and commentaries, is included in one report. It takes a long time to prepare such a report and then to print it. When it reaches the hands of the users many of them become disillusioned because the statistics have become outdated and much of the report does not cater to their selective needs.

49. It is best to plan publication of results of surveys in different stages and through separate bulletins or reports, taking into account various types of users and their requirements. Such a scheme is presented below for discussion purposes:

(a) First of all a short bulletin may be released explaining the main features of the survey, important limitations of the data and a summary of conclusions and findings based on the results. The presentation will be mainly in the form of a narrative in popular style with a few tables highlighting the results. The object should be to reach non-technical administrators, policy makers and public leaders.

(b) Next, a technical report on the survey may be published describing the objectives, scope, concepts, definitions and methodology of the survey, including quality presentations with full documentation. This report may also include some basic tables and their analysis, depending on what tabulations are available at the time. This report will be meant primarily for professional statisticians, subject-matter specialists, researchers and other users with a good knowledge of statistics.

(c) A third publication may comprise a general report covering a description of the survey, including methodology and quality

presentation, in non-technical language as far as possible, a simple analysis of the statistics and the full tabulations. For more technical details, reference should be made to the earlier report. This publication will cater to the needs of general users and provide access to complete results of the survey for professional users also.

(d) In addition, there may be one or more monographs presenting a deeper analysis of the statistics, directed to specific issues arising in planning and policy-making. If necessary, preparation of such monographs can be entrusted to research institutes or universities outside the producing statistical agency. The monographs may contain special tabulations of data relevant to the issues examined. The monographs will be meant primarily for planners and for statisticians engaged in the decision-making process.

50. Some suggestions have been made in this section, for the consideration of the Committee, for rationalizing the process of publication of statistics, particularly the results of surveys, and making them more timely and user-oriented. There are, of course, impeding factors, for example, inadequate funds, unavailability of trained personnel, shortage of equipment, undeveloped institutional infrastructure and difficulties in advance planning and programming. All these problems have to be addressed in the process of developing overall national statistical capabilities.

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DEVELOPMENT OF OVERALL NATIONAL STATISTICAL CAPABILITIES. DEVELOPMENT OF COMPUTING FOR STATISTICAL PURPOSES

(Item 5 (c) of the provisional agenda)

STATISTICAL COMPUTING PROJECT

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This paper, prepared by the Statistical Division of the Economic Commission for Europe, is reproduced as submitted.

STATISTICAL COMPUTING PROJECT

European regional project for use of computers for statistical purposes and the design and development of statistical information systems.

I. THE PROJECT APPROACH

In recent years the national statistical offices of ECE member countries have been engaged in an exchange of experiences in the use of computers and the design and development of statistical information systems. At the suggestion of ECE and some European countries, UNDP agreed to assist in undertaking a regional project on the use of computers for statistical purposes and the design and development of automated statistical information systems. The Statistical Computing Project (SCP) was established in 1980.

The following countries are participating in the Project: Bulgaria, Canada, Czechoslovakia, Denmark, Finland, France, German Democratic Republic, Greece, Hungary, Ireland, Italy, Netherlands, Poland, Romania, Spain, Sweden, Turkey, United Kingdom and Yugoslavia.

The Project has been carried out jointly by the statistical offices, or equivalent institutes, of the participating Governments, UNDP and the ECE as the Executing Agency.

II. OBJECTIVES OF THE PROJECT

The programme is aimed at increasing the efficiency of national statistical offices with a better use of computers, in order that policy-makers and planners have more accurate and more up-to-date data. With a division of labour in programming and in the development of software products between national statistical offices, the skill and experience of highly developed countries will be transferred to countries with less-developed computerization of statistical services.

The immediate objectives of the Project are to establish a programme on the use of computers for statistical purposes and the design and development of appropriate software and methods for statistical information systems. Tasks include the organization of joint work between national statistical offices of participating countries on the design of software products for everyday work, including applied research, development and testing of software products and related tools specially designed for use in practical statistical work.

III. SUMMARY OF ACTIVITIES

Four Joint Groups have been established to work on the following matters: (a) data editing; (b) table generation; (c) statistical data base management; and (d) metainformation system. Activities and outputs are summarized in Annex I.

Data editing specifically is of paramount importance as regards consistency and quality of the output produced in statistical offices. It generally occupies a substantial volume of staff and at the same time has a heavy impact on the problem of speeding up statistical production work in order to improve the timeliness of putting socio-economic information at the disposal of planners and policy makers. The AERO generalized data editing software is the main result of the joint work.

Data base management technology presently is one of the major research development areas in the field of data processing. For national statistical offices, this issue particularly is of eminent future importance in view of their large and ever-increasing data stocks and the flexibility that is expected by policy makers as regards ad hoc evaluation of these data. Enhancement of the RAPID data base management system with additional new software modules is the significant result from this work area. The Base Operator software system is the recent output of this Joint Group.

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The impact of table generation technology on the efficiency of national statistical offices is an issue of general importance in the field of statistical data processing. Efficient table generation software affects very much the overall performance providing a tool for producing complex statistical tables that are requested by statisticians and policy makers. Two new tabulations packages have been produced: INTERTAB and TAU.

The applied research on metainformation system focuses on a country's statistical information system as a whole. Given the increasing number and volume of data stocks and the growing extent of processing socio-economic information the need of developing integrating views and methods is generally felt, and a specific task force is devoted to that area. A guidebook for metainformation users and designers will summarize the findings of the experts in this connexion.

In addition to the six sessions of the Steering Committee and seven meetings of the lead countries (together with the Bureau of the Steering Committee), the four Joint Groups held 41 meetings during 1981-1984. The Joint Groups established expert groups and assigned specific sub-tasks to them. In this connection, experts met at 33 planned and ad hoc meetings during 1981-1984. More than 500 working papers, drafts and other documents were prepared for these meetings for consideration and discussion by participating countries, Joint Groups and the Steering Committee. The SCP countries organized and hosted most of the meetings.

A. Table Generation

The Joint Group on Table Generation set up the following work programme:

- evaluation of existing table generator packages;
- formulation of recommendations as regards the suitability of existing software for statistical offices;
- specification of the requirements for the functional characteristics of table generators;
- definition of a programme for developing and producing the appropriate software to that specification;

The impact of table generation technology on the efficiency of statistical production does not need to be particularly emphasized. Therefore efficient table generation calls for improved software which should, in particular, concern the variety of data description, adequate file management, user interface via processing language and a wide scope of internal processing aspects effecting the overall performance. The Joint Group concluded these objectives in the specification and development of a new table generating system, called INTERTAB.

In 1981, a draft profile of functional characteristics of a table generator was set up and later the Joint Group developed the main functional specification and structural concept of an "ideal" tabulation system.

In parallel, the Group scrutinized table generator packages widely used in statistical offices with a view to possible modification to fulfil the requirements that have been defined by the Group. However, no existing system was esteemed a serious candidate for such modification. The TAU system, having been developed by the Office of Population Census and Surveys (United Kingdom) which later came to the knowledge of the Joint Group, was particularly evaluated from this aspect.

/As

As regards the general evaluation task of tabulation packages, the Group agreed on a check-list which had been used for a preliminary report and a description of three selected packages. This report was reviewed and a final report of feature analysis and evaluation of five selected tabulation packages was completed in 1984.

After having discussed the specifications of main characteristics and functional requirements considered important for a tabulation system, the Joint Group realized that this could be covered only with a completely new software system, called INTERTAB. Though the development and implementation of a completely new table generator package had been considered unrealistic at the outset, the Joint Group felt that the implementation of INTERTAB might be feasible within the lifetime of the Project. In October 1981, at its second meeting, the Steering Committee agreed that the Joint Group would develop a new software system such as INTERTAB.

It should be mentioned that the parallel design of modules and later their coding and joint testing called for a high standard and precise interfacing in the implementation work, and demanded close co-ordination among the five implementation centres. The chairmen of the Joint Group and the expert group co-ordinated most of the practical work on implementation which was promoted by the Project Co-ordinator and the Technical Adviser.

Even though delays were encountered in several sub-tasks, the overall plan of the development was nearly implemented within the timetable agreed, in particular, the milestone activities were completed very close to the original scheduled dates. By the end of 1984, coding of INTERTAB Version 1 was completed and after several joint testing sessions the software system was nearly completed and thoroughly tested. It is envisaged that after the final test in May 1985, the distribution tape of INTERTAB Version 1 will be compiled by the third quarter of 1985 together with revised full documentation of the system.

In 1984, the Joint Group produced basic documentation on INTERTAB in five volumes of manuals; test data for the software system acceptance test was also prepared. The Group drafted proposals for future maintenance of INTERTAB which will be undertaken with the shared responsibility of the implementation centres of Czechoslovakia, Denmark amd the German Democratic Republic.

The Office of Population Census and Surveys (OPCS, United Kingdom) co-operated with the statistical offices of Poland and Romania in the implementation and testing of TAU in the respective countries. Poland carried out full implementation of TAU developed by OPCS for ICL computers. The implementation of TAU is in progress in Romania. In April 1983, a one-week user course was held in London, arranged by the OPCS, for experts from Poland and Romania.

B. Data Editing

In the field of data editing, the Joint Group agreed on the following main tasks:

- evaluation of data editing methods actually applied in national statistical offices;
- development of data editing systems both for qualitative and quantitative data;
- improvements of the AERO package, the selected data editing system and elaboration of the full documentation.

/Data

Data editing occupies a substantial volume of staff and, at the same time, has a heavy impact on the problem of speeding up statistical production work in order to improve the timeliness of putting socio-economic information at the disposal of planners and policy makers. Data editing specifically is of importance as regards consistency and quality of the output produced in statistical offices. This is why the field of data editing holds a somewhat special position within the area of statistical data processing, and the Steering Committee gave high priority to this work area.

At the outset of the Project the Joint Group agreed to specify a new version of the AERO generalized data editing system developed by Hungary. After having collected comments and recommendations from countries, AERO Version 2 was developed in 1981 and made available, together with the documentation. Countries who implemented AERO for selected applications reported on their experience, which also complemented the improvement of the new AERO versions. The Group later recognized a need for a version of AERO using PL/I(F) compiler, and this new version of AERO was available in mid-1984. Interactive features were implemented in AERO Version 2.5 in 1984. A modification of this version with a better programming technique was agreed upon (AERO V.2.6). Hungary and Yugoslavia planned to complete this development by mid-1985. The updated documentation on AERO, including the interactive facilities, is now available.

In parallel with the enhancement of the AERO software system, a new data editing system had been developed in Spain, called DIA, showing different design characteristics compared with AERO. This system became operational in 1984 and its feature analysis will be added later to the existing paper on evaluation of data editing systems.

A comparative analysis of existing generalized data editing packages was agreed on with the aim of providing an aid for selecting appropriate packages for a given application. A final paper on feature analysis and evaluation of five selected generalized data editing systems was completed and published in 1984.

A methodological document on the data quality problems in connection with editing statistical data was prepared and discussed at several meetings. The Joint Group agreed that the data quality problems may be one of the key issues in connection with editing statistical data, and this problem should be exposed accordingly in the overall design of the editing process. A final paper on the data quality problems was prepared.

After having recognized that data editing has a key function in the processing of surveys, in 1981 the Joint Group proposed to enlarge its work towards generalized survey processing systems (GSPS). The Steering Committee endorsed this additional objective of the Group. The basic functions, features and the content of Generalized Survey Processing Systems were outlined. Numerous working papers were prepared towards the design and implementation of GSPS, in which existing software systems were tabled and considered as potential elements of GSPS. The United Kingdom co-ordinated this work and finalized a paper on "Design and implementation of generalized survey processing systems". In 1985, a new Joint Group on GSPS was established.

As the first available software product of the SCP, the AERO system was widely distributed to the SCP countries and outside the SCP. Mention should be made that the AERO software system was sent to the Statistical Institute for Asia and the Pacific (SIAP, Tokyo) and it was installed on their computer system. The AERO system is now offered by SIAP for distribution to statistical offices within the ESCAP region with a modest support and training through SIAP computer centre. This arrangement was the first step for promoting practical transfer of the SCP output outside the ECE region, in particular to developing countries.

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C. Relational data base management - RAPID

The countries of the Joint Group on statistical data base management agreed that they will concentrate on the RAPID relational data base management system, developed and maintained by Statistics Canada. They outlined the following work programme:

- further development of RAPID software system;
- maintenance and support to existing and new implementations of RAPID in participating statistical offices;
- development of interfaces to existing systems and applications that serve main functions and operations of statistical work;
- preparation of additional documentation as an introduction to RAPID and to relational DBMS.

The data base management technology is, presently, one of the major issues in statistical offices. It is of particular importance in view of the very large and ever-increasing data stocks and the flexibility that is expected by users as regards ad hoc evaluation and processing of these data. It was recognized that RAPID is being used in statistical offices and further support should be provided for promoting new implementations of RAPID within statistical organizations.

The Joint Group on RAPID started to implement its programme immediately after the first meeting of the Steering Committee in December 1980. The RAPID system has been made available to participating countries by Statistics Canada. The Group defined the major tasks for the Project with the aim of establishing an efficient user group of statistical offices, in which Canada, the German Democratic Republic, Hungary and Sweden started to closely co-operate on further development of RAPID. They also agreed that promoting new installations of RAPID within participating statistical offices should have special importance for broadening the application of existing software.

In 1981, the RAPID software was installed in Hungary and the census application was later added to this installation in 1982-1983. Consultants from Canada and Sweden supported to a large extent this complex installation. New RAPID installations have been carried out in the German Democratic Republic in 1982-1983 and in Yugoslavia in 1983, with the help of consultants from Statistics Canada and Statistics Sweden. The installation in Berlin aimed at a pilot application on international statistics. In Belgrade, the pilot application of retail and consumer price statistics will be in operation in 1985 after the full installation of the new hardware scheduled for January 1985.

The installation of RAPID in the German Democratic Republic was aimed at making RAPID available on other IBM-compatible mainframes. The practical transfer of RAPID onto EC mainframe computers was sucessfully completed in Berlin.

In 1982, the Joint Group studied the forms and ways of developing interfaces between application programs and RAPID software. As the result of this study, the concept of the base operator system was defined and a new co-operative approach to the development of a set of RAPID-related software pieces was agreed. This new software system would support typical, elementary operations on RAPID files or conventional flat files, and it could be an easy tool for combining these elementary operations with applications of RAPID data

/base

base used for producing requested statistical output. At present, six base operators have already been developed within the frame of the new RAPID-related software. The base operator system will be available together with the documentation .

D. Metainformation system - METIS

The joint Group on Metainformation System decided on the following work programme:

- review and evaluation of formalized methods and rules for describing statistical data;
- review of experience acquired by statistical offices in the use of description of data in catalogues and registers;
- specification of general data model as a basis for the development of metainformation system (later called METIS);
- logical specification of metainformation system.

The issue of METIS focuses on a general data model to be used in designing a metainformation system in connection with the statistical information system as a whole. Given the increasing volume of statistical data, the growing interrelationship among statistical surveys and the growing extent of processing socio-economic information, in particular, in response to non-statistician users, the need to develop integrating views and methods was generally felt, since successful work in this direction would naturally augment the efficiency of the statistical information system. It therefore appeared well justified that the specific Joint Group to this area had been established although, no doubt, it constitutes one of the most complex fields of research. This was well reflected in the joint work carried out by four countries actively participating in the implementation of the work programme for the Joint Group.

In 1984, the Joint Group concentrated on the preparation of the User Guide to the Metainformation Systems in Statistical Offices, which was completed and published in November 1984. This document is aimed at providing a rather precise specification of the methodology aiding statisticians on how to use metainformation, data on statistical data, in the environment of statistical information systems. The system of data contents and the retrieval of these data are explained in detail in the User Guide. As the Joint Group did not devote substantial time to the question of development of relating software elements, this document gives only a general reference to this matter without any attempt being made towards reviewing software elements and methods available and used for sub-tasks or coverage of METIS. The selected chapters for designing METIS have been revised and this document will be published in 1985

E. Other Activities

The Steering Committee considered forms and ways of disseminating information on the work carried out within the framework of the Project. It approved the publication of an Information Newsletter at regular intervals, in addition to reports on planned meetings of various SCP bodies. In September 1983, a scientific meeting on "Computer software for national statistical offices" was organized at the forty-fourth session of the ISI in Madrid. This meeting aimed at bringing some of the outputs of the SCP to the attention of the representatives from developing countries present at the ISI meeting.

/At

At its first meeting in Geneva, the Steering Committee considered that a Handbook on statistical data processing methodology should be compiled in harmony with the general objectives of the Project. The preliminary draft paper for this work was prepared, commented on and updated in 1982. On the basis of the available drafts and collected comments two experts, one from Sweden and one from the United Kingdom, were engaged for the finalization and editorial work on the Handbook. In November 1983, the Handbook was published and distributed to European statistical offices and also to the statistical offices of developing countries, outside Europe, who expressed their appreciation particularly in respect of the usefulness of the Handbook for the statistical services of the EDP centres in the respective regions and countries.

The Steering Committee also agreed that there is a need for the standardization of the terminology used in statistical computing, and that the preparation of a specialized glossary was of primary importance. Chapters of the Glossary of Terms used in connection with the the joint work of the Project were drafted in 1982 and circulated to experts of the Joint Groups for comments and updating. The final version of the Glossary was completed and published in November 1984.

The Committee recommended that a Workshop on the SCP, which was held in Budapest in November 1984, might be useful for disseminating information on the results of the SCP, in particular to developing countries. The purpose of the Workshop was to provide information on the SCP to experts of statistical offices from different aspects, to bring an overall presentation on the Project, in particular on methods and software developed within its framework, and to review the results of the international co-operation in the work area of statistical computing. The large number of participants (53 from 26 countries and 16 Hungarian experts) who attended the Workshop demonstrated in a concrete way that participating statistical offices were keenly interested in the work carried out during the lifetime of the Project.

IV. DISSEMINATION OF SCP KNOW-HOW AND PRODUCTS

In harmony with the decision of the Steering Committee that the products developed within the Project should be made available to developing countries, substantial efforts have been devoted to the transfer of the SCP output and know-how to those countries. Co-operation with other United Nations Regional Offices was established in order to keep developing countries informed about the SCP products available, and to define ways of co-operating in the transfer of the SCP know-how. At the request of the Economic Commission for Latin America and the Caribbean (ECLAC), documentation on INTERTAB and TAU has been provided. The program tape of AERO and the documentation has been sent to ECLAC, Santiago, and to ESCAP, Bangkok. The AERO system was successfully installed in SIAP, Tokyo.

Direct consultations took place in Bangkok (1983) and Addis Ababa (1984) with staff members of ESCAP and ECA on the issue of the practical transfer of SCP software packages and know-how to those regions. An information note on the SCP was also sent to Bangkok and Addis Ababa. In response to the information given on the SCP activities and results, several developing countries have indicated strong interest in the Project and have requested various documents and software descriptions.

It should be mentioned that a number of countries not participating in the SCP have also contributed, to some extent, to the SCP. The Joint Group on Data Editing received valuable information and documentation from the statistical offices of Austria, Australia, the Federal Republic of Germany,

/and

and from the United States Bureau of the Census. The Joint Group on Table Generation has likewise received valuable and useful documentation from the Australian Bureau of Statistics and from the United States Bureau of the Census.

V. THE FUTURE OF THE PROJECT

The future of the Project after 1984 was first discussed at the fourth meeting (special session) of the Steering Committee in Geneva (March 1983) in connection with the evaluation of the SCP. At its fifth meeting in Belgrade (November 1983), based on the common opinion of participating countries that the SCP was beneficial to the statistical offices participating in the Project, the Steering Committee agreed on the need for the continuation of international co-operation in the field of software development. In the light of the envisaged results of software systems developments and of their implementation in the participating statistical offices, the Committee stressed that the main field of future co-operation should be defined and embodied in the programme of work of the Conference of European Statisticians (CES).

As it was agreed that international co-operation in the field of software development will continue under the auspices of the CES, the Joint Groups set up their respective programmes of work for 1985-1986. This called for a study of the overall results achieved by the SCP on the one hand towards their multiple utilization for statistical offices and, on the other, for the full implementation of the SCP results and methods.

Considering the final outputs of the SCP, there were products ready for use while there were tasks either which were not completed by the end of 1984 or need further development towards new versions of developed software systems. All these items have been mentioned in this report and the summary of them is given in the Annex. The final outputs of the SCP will provide a solid basis for the departure of a new phase of international co-operation in the selected work areas of statistical computing.

Regarding the organization of work for the phase after 1984, it is now agreed to retain the organizational form of the Joint Groups for selected subject areas in which statistical offices of the ECE countries interested in the co-operative effort will continue to participate or join by 1985. Proposals for four subject areas were prepared, together with the preliminary programme of work for 1985 and onwards, which have now been incorporated in the work programme of the CES. The Joint Groups will implement the work programme and co-ordinate their work in a similar way to that followed when they carried out the joint work during the lifetime of the SCP.

In recent years, the Steering Committee adopted regularly the programme of work for the coming years, and guided the joint work of the Project on that basis. In this respect, the Joint Groups in collaborating with the Project Co-ordinator prepared and submitted proposals to the Committee for consideration. As regards the work plans of the Joint Groups for 1985 and onwards, the Groups drafted their respective programme of work for this period. These were discussed by the Steering Committee in Bratislava (December 1984) and later by the meeting of the Task Force in Geneva (February, 1985), which is composed of the lead countries of the Joint Groups. The Task Force revised and prepared a programme of work for 1985/1986, which will then be submitted to the thirty-third plenary session of the CES for adoption. This procedure would provide a smooth transitional period for the Joint Groups regarding their respective work plans to be implemented.

/Annex I

Annex I

Final output of the Project

During the period of 1981-1984, numerous activities have been carried out and the outputs of the Project produced are summarized in this annex. Reference is given to outputs produced either in generally available form for applications like software systems and study paper on related software and methodology or in results of individual applications of particular software systems in national statistical offices. It should be mentioned that these results have been utilized towards the realization of the related development objectives, both in terms of Project's objectives and in development objectives of individual statistical offices participating in the joint co-operative effort.

/Annex I (continued)

Annex I (continued)

Activities	Output	Completion date
A. Joint Group on RAPID		
1. Transfer of RAPID software system to new installation site from Canada.	Installation of RAPID in Hungary	4Q/1981
	Installation of RAPID in the German Dem. Rep.	4Q/1981
	Installation of RAPID in Italy	1Q/1983
	Installation of RAPID in Yugoslavia	4Q/1983
2. Implementation of RAPID software system on IBM-compatible mainframes.	Implementation of RAPID on EC 1055 hardware system	1Q/1984
	Implementation of RAPID on EC 1044 hardware system	1Q/1984
	Documentation of EC version of RAPID software	3Q/1984
3. New data base applications of RAPID software systems.	Population census (2%) applications (in Hungary)	4Q/1983
	International Statistics (in German Dem. Rep.)	2Q/1983
	Retail and consumer price statistics (in Yugoslavia)	3Q/1984
4. Development of base Operator system (new software elements for RAPID software).	Design and implementation of set of base operators	3Q/1984
	Documentation of Base Operator system	4Q/1984
5. Completion of documentation on RAPID software system.	RAPID Guidelines	1Q/1984
B. Joint Group on Data Editing		
1. Transfer of AERO software system to new installation	Installation of AERO in Yugoslavia	1Q/1981
	Installation of AERO in Spain	1Q/1981
	Installation of AERO in SIAP (Tokyo) (AERO Version 2.0)	4Q/1983

Annex I (continued)

Activities	Output	Completion date
2. Further development of AERO software system	Release of AERO Version 2.0	4Q/1981
	Documentation on AERO Version 2.0	2Q/1982
	Conversion of AERO Version 2.0 into PL/I(F) compiler	2Q/1984
	Release of AERO Version 2.5	4Q/1983
	Machine-readable documentation on AERO Version 2.5	4Q/1984
	Release of AERO Version 2.6	1Q/1985
3. Comparative analyses of selected data editing systems	Paper on the feature analyses	3Q/1984
4. Development of DIA data editing system in Spain	Release of DIA Version 1.0	3Q/1984
5. Study of data quality problem	Paper on data editing and its effect on quality of data	4Q/1983
6. Design of generalized survey processing system (GSPS)	Evaluation of GSPS needs and requirements	3Q/1983
	Specification on design and implementation of GSPS	1Q/1985
C. Joint Group on Meta-information System		
1. Development of meta-information system (METIS)	Conceptual description of METIS	2Q/1981
	Functional specification of METIS	2Q/1982
	Draft manual for METIS users	2Q/1984
2. Conpilation of documentation on METIS	Users Guide to Meta-information System in Statistical Offices	4Q/1984
	Selected chapters for designers of METIS	1Q/1985
3. Implementation of METIS	Pilot implementation of METIS in Czechoslovakia	1Q/1984
	Pilot implementation of METIS in Poland	2Q/1984

Annex I (continued)

Activities	Output	Completion date
D. Joint Group on Table Generation		
1. Development of new tabulation system, INTERTAB	System specification of INTERTAB	4Q/1982
	Detailed design of INTERTAB	4Q/1983
	Coding and testing INTERTAB Version 1	2Q/1985
	Three volumes of system documentation	4Q/1984
2. Comparative analyses of selected tabulation systems	Paper on the feature analyses	4Q/1984
3. Development of TAU tabulation system in the United Kingdom	Implementation of TAU Release 3	2Q/1983
	Implementation of TAU Release 4	1Q/1984
	Implementation of TAU Release 5	3Q/1984
4. Transfer of TAU software system to new installation site from the United Kingdom	Installation of TAU Release 3 in Poland	4Q/1983
	Evaluation of TAU Release 3 in Romania	4Q/1983
E. Others		
1. Disseminating information on the work and products of the Project	Organizing and arrangement of a scientific meeting on the SCP products at the forty-fourth session of the International Statistical Institute in Madrid	16 September 1983
	Organizing and arrangement of a Workshop on the SCP in Budapest	12-17 November 1984
	Publication of a booklet on the SCP products (Reading across the regions with the SCP)	February 1985
2. Compilation of a Handbook on Statistical Processing Methodology	Publication of the Handbook	4Q/1983
3. Compilation of a glossary of Terms on the SCP	Publication of the Glossary	4Q/1984

ANNEX II

Project budget and its revisions (in US$)

Status of revision	TOTAL	1979	1980	1981	1982	1983	1984	1985
Original budget (see Project document) September 1980	915 000	19 000	203 350	249 000	265 500	178 650	-	-
Revised budget RER/78/008/G February 1981	865 643	20 606	14 837	296 200	302 400	231 600	-	-
Revised budget RER/78/008/I April 1982	880 263	20 606	17 775	157 304	249 620	227 000	207 958	-
Revised budget RER/78/008/J April 1983	893 022	20 606	17 775	157 304	208 822	239 759	248 756	-
Revised budget RER/78/008/K March 1984	919 602	20 606	17 775	157 304	208 822	209 360	303 735	-
Revised budget RER/78/008/L March 1985	949 602	20 606	17 775	157 304	208 822	209 360	227 126	108 609

Annex III

Governments' Contribution in Kind to the Project (1981 - 1984)

(1981 - 1984)

	1980		1981		1982		1983		1984		Total	
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
System analyst (no) 1/	-	-	-	44	-	52	-	53	-	61	-	-2/
Man-months	140	-	250	154	250	202	250	238	-	313	740 3/	987
Programmer (no) 1/	-	-	-	9	-	17	-	16	-	16	-	-2/
Man-months	-	-	-	23.5	-	88	-	63.5	-	103	-	278
Consultant	-	-	-	2	-	3	-	5	-	7		-2/
Man-months	-	-	4	2.5	4	3	4	3.5		4	12	13
Mission costs of deleçates (in US$ equivalent)	15,000	-	20,000	47,500	20,000	67,970	19,000	79,100	-	100,550	74,000	295,120
Hosting costs of meetings (in US$ equivalent	10,000	-	15,000	18,300	15,000	17,390	10,000	9,210	-	11,500	50,000	56,800
Computer time (in US$ equivalent)	150,000	-	250,000	99,000	250,000	154,000	195,000	188,000	-	454,000	845,000	895,000

Notes:

1/ Contribution of system analysts and programmers were planned together but reported individually by countries.

2/ Since experts can, in most cases, be the same from one year to the other, no cumulative total is drawn up.

3/ The figure of 740 should be compared with 1185.

Data were available from reports of national statistical offices participating in the Project.

UN
EC
AND
SOCIAL COUNCIL

GENERAL

E/ESCAP/STAT 6/6
21 October 1985

ORIGINAL: ENGLISH

ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC

Committee on Statistics

Sixth session
19-25 November 1985
Bangkok

DEVELOPMENT OF OVERALL NATIONAL STATISTICAL CAPABILITIES: STATISTICAL TRAINING

(Item 5 (b) of the provisional agenda)

REPORT OF THE PROJECT MANAGER/DIRECTOR OF THE STATISTICAL INSTITUTE FOR ASIA AND THE PACIFIC

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A. SIAP ACCOMPLISHMENTS (June 1970-September 1985)

1. The Statistical Institute for Asia and the Pacific (SIAP) completed the third five-year phase on 30 September 1985 and commenced the fourth five-year phase on 1 October 1985.

2. During the 15-year period of operation, it had conducted 15 General Statistics Courses, 25 Advanced Courses/Seminars, 5 Automatic Data Processing Courses, 36 Country Courses, and 11 sessions on software demonstrations. It had also participated in a number of joint training programmes with other international or national organizations and offered research training facilities to some countries. Some 32 member and associate member countries in the ESCAP region had sent participants to the Institute's training programmes.

3. A sumarry of the number of participants by country and by programme is given in annex I. Lists of topics covered in Advanced Courses/Seminars and Country Courses are given in annexes II and III, respectively.

4. Classified by topic or subject, the following numbers of Advanced Courses/Seminars were conducted in various countries:

	Advanced Courses/Seminars	Country Courses
Basic Statistical Operations and Evaluations (Censuses, Sampling, Sample Surveys)	11	16
Special Statistics for Development Planning	9	10
Statistical Framework/Organization	3	8
Data Processing and Management	2	2
Total	25	36

5. To guide the operations of the Institute, the Advisory Council had met 15 times - 10 times during the first phase (1970-1975), twice during the second phase (1975-1980) and three times during the third phase (1980-1985). Policy issues and problems were discussed in connection with the content and duration of programmes, adequacy of resources, staffing and administrative concerns and, in general, on matters raised in the Committee on Statistics and the Economic and Social Commission for Asia and the Pacific.

/6.

6. The Institute extends its grateful appreciation to (a) the host Government of Japan, for its substantial contribution in cash and in kind, covering not only facilities but also fellowships; (b) the contributing countries of the ESCAP region; (c) the Government of the Netherlands, for substantial fellowship funds and full-time non-reimbursable experts; (d) the Government of the United Kingdom of Great Britain and Northern Ireland, for short-term non-reimbursable experts; (e) the Government of the Federal Republic of Germany, for full-time non-reimbursable experts during the first phase; (f) the Government of France, for full time non-reimbursable experts during the second phase; (g) the Government of the Union of Soviet Socialist Republics, for short-term non-reimbursable experts during the first phase; (h) the Government of Canada, for short-term non-reimbursable experts during the first phase; and (i) the Government of India, for a short-term expert on a cost-sharing basis (TCDC arrangement); (j) UNDP, for its very substantial institutional contribution (during the first and second phases) and programme support throughout the three phases, for which SIAP is especially grateful; (k) the United Nations Fund for Population Activities (UNFPA) for its substantial programme support during the third phase; (l) the Asian Development Bank (ADB) for the provision of short-term experts on a non-reimbursable basis during the third phase; and (m) the many other United Nations statistical divisions/offices (ESCAP Statistics Division, United Nations Statistical Office, FAO Statistics Division, and so on) for the provision of short-term experts on a cost-sharing basis and many printed materials for training.

B. LOOKING AHEAD TO THE FOURTH PHASE (October 1985-September 1990)

7. In order to have a fresh look at the statistical training needs of countries in the ESCAP region, the newly-appointed Project Manager/Director conducted three missions this year to selected countries: ASEAN countries (April-May); South Pacific island countries (May-June) and South Asia and China (June-July). The problems and needs of countries were observed to be different and a number of recommendations explicitly made or implied might be summarized as follows, not necessarily in the order of priority or importance:

(a) SIAP to continue to conduct the General Statistics Course, of shorter duration and more frequently, constantly updating contents by incorporating topics in advanced seminars/workshops and adding a module on microcomputing;

/(b)

(b) More country courses to be conducted on a variety of special topics (for example, statistics on agricultural production, issues on environmental statistics/water balances/non-renewable resources/evaluating project performance, and so on); they should be more country-specific, similar to the FAO demonstration-type training (but on non-agriculture subjects); more subregional, lower-level training of shorter duration of about four weeks, and to include also statistical officers from departments other than statistics alone;

(c) A short-term training course on evaluation of software would be preferred over the three-month ADP course; there should be training in microcomputing, including its software, and also country courses on statistical data processing;

(d) Training materials should be produced in video for various levels of statistical personnel, and materials in microcomputing printed for dissemination to the countries;

(e) The link between university programmes in applied statistics and those in government statistical services should be strengthened;

(f) Advisory services in statistical training should be initiated;

(g) Statistical research in government statistical services should be promoted which could lead to more involvement of statisticians in development policies and plan formulation;

(h) Advance-level training in other areas of applications of statistics in business, industry, medicine, biological sciences, and so on should be promoted.

8. The report was presented at the Tripartite Project Review Meeting which was held at Tokyo on 25 and 26 July 1985 to review the progress made in the UNDP-supported programmes implemented by SIAP. The Tripartite Project Review was presided over by Mr. David M. Thorup, Deputy Regional Representative of UNDP, Bangkok. The Technical Co-operation Division and the Statistics Division of the ESCAP secretariat were also represented. Representatives of the host Government, Japan, and of Bangladesh, India and Nepal also attended the Meeting. Country representatives at the meeting confirmed most of the points brought out in the report.[1/]

/9.

1/ Copies of the report will be available on request from SIAP.

9. At the same Meeting, the results of the "Quick survey of statistical and ADP training capabilities of government statistical offices in (selected) countries of the ESCAP region" conducted in May-June 1985 were presented (see annex IV). The results brought out the current status of statistical organizations in countries of the region, especially in respect of their capability to train their ADP and statistical personnel. The results further confirmed the need for different strategies to be applied in helping countries develop their statistical capability, especially in the field of statistical training.

C. PROGRAMME ACTIVITY PROPOSAL FOR THE FOURTH PHASE

10. The current regular training programme will be continued. However, the contents of each activity, and the level and different modules the programmes contain are to be constantly reviewed keeping in view the recommendations of the Advisory Council (which has yet to be formed and convened), the Committee on Statistics and the Commission (ESCAP).

11. The syllabus of the Group Training Course in General Statistics, fellowships of which are supported by the Government of Japan, will be particularly re-examined to emphasize the more basic topics in fewer modules covering: (a) framework of statistical systems, (b) methodological principles and applications, and (c) statistical processing, operations and management. The basic topics will be supplemented by exposure of participants to (d) special topics normally addressed in typical national statistical organizations, either taken separately or integrated among the basic topics.

12. A selected lecture series of basic topics in the General Course will be experimentally produced in audio-visual form early during the fourth phase, initially to supplement class lectures. Later, the audio-visual tapes will be disseminated to requesting countries. These tapes will also be accompanied by print manuals containing instructions, exercises, and other materials to help local trainers conduct and proctor laboratory sessions. The audio-visual activity has been proposed to UNDP for funding under its programme support to SIAP.

/13.

13. Reports of Advanced Courses Seminars, fellowships in which have been provided by the Government of the Netherlands, and Country Courses conducted during the past 15 years will also be re-examined for materials that could be organized into related topics for the purpose of (i) continually improving the topics covered in the general course, and (ii) producing materials in audio-visual form for dissemination to requesting countries in the region.

14. There will be a separate course on statistical processing by micro-computers starting in 1987, with fellowships to be provided from the cash contributions of the host Government of Japan and other participating Governments. The existing Group Training Course in Automatic Data Processing, fellowships in which are also provided by the Government of Japan, will be re-examined to include selected topics on microcomputer processing.

15. The Statistical Software Demonstration Centre (SSDC) will be continued, and although microcomputer-based software will be added for demonstration, they will be limited to a few well-established ones.

16. Aside from the Centre and the country training of trainers programme which are currently supported by UNDP, a major programme proposed for UNDP funding under which audio-visual materials would be produced for training purposes is the statistical training capability programme.

17. In addition to training statistical trainers (a) advisory services on statistical training will be provided by SIAP on a short-term basis; (b) sustained contacts with national statistical trainers will be maintained by holding appropriate seminars/workshops for them to improve the quality of training; (c) there will be attempts to establish a three-way linkage consisting of local academic institutions, national statistical organizations and SIAP to promote and strengthen national statistical training capabilities; and (d) as resources permit, a TCDC-type of arrangement by the Institute will be made for involving national experts and lecturers in statistics and data processing in other country training programmes of the ESCAP region.

/Annex I

Annex I

SUMMARY OF NUMBER OF PARTICIPANTS TRAINED
BY COUNTRY AND BY PROGRAMME
(as of 30 September 1985)

Country or area	A	B	C	D	E	F	G	Total
Afghanistan	19	-	13	44	-	-	-	76
Australia	-	-	2	-	-	-	-	2
Bangladesh	24	5	23	62	-	23	-	137
Bhutan	10	-	1	-	1	-	-	12
Brunei Darussalam	2	-	2	-	-	-	-	4
Burma	8	2	8	-	-	-	-	18
China	10	2	5	50	-	6	80	153
Cook Islands	-	-	2	-	-	-	-	2
Democratic Kampuchea	7	-	1	-	-	-	-	8
Fiji	9	-	6	12	-	-	-	27
Hong Kong	27	3	11	12	-	4	-	57
India	31	3	31	21	-	1	30	117
Indonesia	36	5	30	42	-	30	31	174
Iran (Islamic Republic of)	27	-	13	53	-	-	-	93
Japan	5	2	14	-	2	-	-	23
Kiribati	2	-	-	-	-	-	-	2
Lao People's Democratic Republic	6	-	-	-	-	-	-	6
Malaysia	21	7	20	24	1	4	22	99
Maldives	4	1	4	13	-	-	-	22
Nepal	13	1	18	55	2	-	160	249
Pakistan	23	5	24	91	1	18	-	162
Papua New Guinea	9	1	5	26	-	-	-	41
Philippines	33	4	30	50	-	-	45	162
Republic of Korea	27	3	21	50	-	24	-	125
Samoa	12	1	6	-	-	-	-	19
Singapore	15	4	16	-	-	-	-	35
Sri Lanka	40	6	23	89	-	4	-	162
Thailand	28	4	33	54	-	4	-	123
Tonga	2	-	1	-	-	-	-	3
Trust Territory of the Pacific Islands	6	-	2	32	-	-	20	60
Viet Nam	4	-	5	-	-	-	-	9
New Caledonia	-	-	-	20	-	-	-	20
Egypt	1	-	-	-	-	-	-	1
Nigeria	-	-	1	-	-	-	-	1
Panama	1	-	-	-	-	-	-	1
Saudi Arabia	1	-	-	-	-	-	-	1
TOTAL:	463	59	371	800	7	118	388	2,206

A - General Statistics Course
B - Course in Automatic Data Processing (ADP) for Statisticians
C - Advanced Course/Seminar
D - Country Course
E - Research Fellowship
F - Regional/Subregional Training
G - Joint Programmes/Activities with other international and national organizations

Annex II

TOPICS OF ADVANCED COURSES/SEMINARS CONDUCTED BY SIAP

1. World Economic Censuses and Related Inquiries for the Second Development Decade - 1971

2. Evaluation, Analytical Processing and Use of Population Census Data - 1972

3. Role, Planning and Conduct of Sample Surveys with Emphasis on Error Control and Interpretation of Results - 1973

4. Role, Function and Methods of Obtaining Agricultural Statistics with Emphasis on an Integrated Programme of Agricultural Data Collection in the Developing Countries of Asia and the Far East - 1974

5. Statistics required for Development Planning in the ESCAP Region - 1975

6. National Accounting Statistics (17 May-18 June 1976)

7. Planning, Designing and Organizing a Population Census (14 June-25 July 1976)

8. Planning and Conduct of Sample Surveys with Emphasis on Error Control and Use of Survey Data (6 May-14 June 1977)

9. 1980 World Census of Agriculture (16 May-24 June 1977)

10. Distribution Statistics (10 April-12 May 1978)

11. Tabulation and Analytical Processing of Population Census Data (19 August-15 September 1978)

12. Statistics for Manpower and Employment Planning (27 August-28 September 1979)

13. Statistics for Poverty, Redistribution and Basic Needs-oriented Development Strategies (12 November-14 December 1979)

14. Processing, Analysis and Use of Agricultural Census Results (11 August-12 September 1980)

15. Statistics Related to Poverty, Inequality and Basic Needs (13 October-14 November 1980)

16. Statistics Required for Estimation of GDP at Constant Price and its Intercountry Comparison (13 July-14 August 1981)

17. Demographic Analysis and Use of Population Census Data with Special Reference to the Use of Incomplete Data (1[illegible] August-25 September 1981)

/18.

18. Modern Statistical Data Processing with Special Reference to Database Methods (21 June-23 July 1982)

19. Social Accounting Matrices (5-30 July 1982)

20. Modern Statistical Data Processing with Special Reference to Database Methods (13 June-15 July 1983)

21. Development of Sampling Methodology with Particular Reference to Household Enquiries (25 July-19 August 1983)

22. Energy Statistics (6-31 August 1984)

23. Indicators for Economic and Social Development (3-28 September 1984)

24. Indicators for Economic and Social Development (12 August-6 September 1985)

25. Economic Censuses and Related Surveys (9 September-4 October 1985)

Annex III

COUNTRY AND SUBREGIONAL COURSES CONDUCTED BY SIAP

1. Subregional Courses concurrently on International Trade Statistics and on Statistical Methods, given in Fiji for countries of the South Pacific Commission - 1972

2. Country Course on National Accounts - Republic of Korea, 1972

3. Country Course on National Accounts - Iran, 1973

4. Country Course on Basic Aspects of General Applied Statistics - Afghanistan, 1974

5. Country Course on Sample Surveys and Statistical Indicators - Sri Lanka, 1975

6. Country Course on National Accounts - Indonesia, 1975

7. Country Course on Statistical Operations and Procedures - Papua New Guinea, 1976

8. Country Course on Statistical Indicators - Nepal, 1976

9. Country Course on Demographic and Social Statistics with Special Reference to Population Census - Afghanistan, 1976

10. Country Course on Agricultural Statistics - Sri Lanka, 1977

11. Country Course on Collection and Compilation of Statistics and Indexes of Consumer Prices and Other Economic Indicators - Iran, 1977

12. Country Course on National and Regional Accounts - Philippines, 1977

13. Country Course on Sample Surveys - Bangladesh, 1977

14. Country Course on Statistical Methods with Emphasis on Practical Aspects - Republic of Korea, 1978

15. Country Course on Demographic and Social Statistics with Special Reference to Population Census - Sri Lanka, 1978

16. Country Course on Evaluation, Analysis and Use of Statistical Data - Thailand, 1978

17. Country Course on Distributive and Service Trade Statistics - Indonesia, 1978

18. Two SIAP/SPC joint Courses on Statistical Operations and Procedures - Trust Territory of the Pacific Islands, 1978

19. SIAP/SPC joint Country Course on Statistical Operations and Procedures - 1979

/20.

20. Country Course on Sample Surveys - Pakistan, 1979

21. Country Course on Management of Statistical Operations - Bangladesh, 1979

22. Country Course on National Accounting Statistics - Sri Lanka, 1979

23. Subregional Course on Statistical Operations (in French) - New Caledonia, 1980

24. Country Course on National Accounting Statistics - Bangladesh, 1980

25. Country Course on National Accounting Statistics - Pakistan, 1981

26. Country Course on Measurement and Control of Errors in Censuses and Surveys - Thailand, 1981

27. Country Course on Statistics on Production, Distribution and Consumption of Agricultural and Food Products - Nepal, 1981

28. Country Course on Sampling Methods with Emphasis on Practical Aspects - China, 1982

29. Country Course on Demographic Statistics with Special Reference to Analysis of Population Census Data - Pakistan, 1982

30. Country Trainers' Course in Agricultural Statistics - Philippines, 1983

31. Workshop on Modern Statistical Computing - India, 1983

32. Country Course on the Statistical Analysis System (SAS) - China, 1983

33. Country Course on Basic Statistics - Maldives, 1984

34. Country Course on Training of Trainers on National Accounting Statistics - China, 1985

35. Country Course on Training of Trainers on Evaluation and Uses of Statistical Data - Malaysia, 1985

36. Country Course on Training of Trainers on Energy Statistics - Pakistan, 1985

Annex IV

QUICK SURVEY OF STATISTICAL AND ADP TRAINING CAPABILITIES OF GOVERNMENT STATISTICAL OFFICES IN (SELECTED) COUNTRIES OF THE ESCAP REGION a/

The questionnaire was sent to 36 countries in April 1985 and 22 replies were received as of end June 1985. Replies were received from 9 Pacific countries, 5 ASEAN and 8 South and East Asian countries or areas as follows:

(a) Pacific: Cook Islands, Fiji, Kiribati, Niue, Palau, Papua New Guinea, Tonga, Tuvalu and Vanuatu;

(b) ASEAN: Brunei Darussalam, Indonesia, Malaysia, Philippines and Singapore;

(c) South and East Asia: Bangladesh, Bhutan, Hong Kong, India, Maldives, Nepal, Republic of Korea and Sri Lanka.

The Survey Form is attached in an appendix.

The following is a summary of the replies received.

A. Statistical organization and operation

1. and 2. The following would classify their system as:

Highly centralized (4)	: Bangladesh, Indonesia, Sri Lanka and Vanuatu
Centralized (12)	: Brunei Darussalam, Hong Kong, Malaysia, Nepal and all Pacific countries (except Vanuatu)
Decentralized (5)	: Bhutan, India, Maldives, Republic of Korea and Singapore
Highly decentralized (1)	: Philippines

3. Out of the 22 reporting statistical agencies, 16 are within the National Planning Office and the rest are located outside.

/4.

a/ Document RAS/84/008-TPR/85/07 for the Tripartite Review Meeting - UNDP Project RAS/84/008: Assistance to the Statistical Institute for Asia and the Pacific (Phase III), held in Tokyo on 25 and 26 July 1985.

4. (a) Co-ordination usually carries certain specific statistical responsibilities. The number undertaking such major responsibilities are as follows:

Setting/formulating statistical standards	18
National income accounting	18
Inter-industry tables	7
Food balance	4
Balance of payments	10
Publishing compiled statistics as well as those compiles by other agencies	19

The more centralized the system, the more the above functions are undertaken by one agency. All such functions are undertaken by the Central Bureau of Statistics in Indonesia. In Sri Lanka, except for balance of payments, all such major responsibilities are also undertaken by the Department of Census and Statistics. Six of the Pacific countries undertake four or five. The rest, either for lack of capability or personnel, undertake only three or less.

The reporting agency in the Philippines does not undertake any of the functions, nor does the reporting agency in the Republic of Korea (except for the setting of standards). Both countries have decentralized systems.

(b)

	Number having responsibilities/functions in conducting censuses	Number having no responsibility/functions in conducting censuses
Population	21	1
Housing	18	4
Agriculture	11	11
Economic	15	7
Other	4	-

(c) The number undertaking major national statistical surveys on households and establishments are as follows:

Income/expenditure	20
Labour/employment	17
Economic survey	17
Industrial production/employment	15
Fertility	12
Agricultural farm production	10

/Fewer

Fewer than 10 agencies undertake surveys on education (9), poverty (6), health (4), other household surveys (3) and other establishment surveys (3).

The distribution in (b) and (c) above simply confirms the feeling that SIAP contact points in the region are with agencies producing general-type statistics rather than substantive type statistics such as in agriculture, education, health, and so on.

(d) Number processing administrative records and producing

Foreign trade statistics	18
Vital statistics	14
Balance of payments	10
Others	9

B. Data processing facilities, personnel and training

5. (a) Number having computer for own use 16

(b) Number having no computer but

Using government/data processing centre	4
Using other arrangements	5

(c) Number having microcomputer(s) 14

6. (a) Number having own data processing personnel (mostly trained locally) 15

In general, an ideal ratio for systems personnel and programmers should be about 1:3. Of those who have data processing personnel, most have approximately this ratio or better, except for the Philippines and the Republic of Korea. However, in the case of the Philippines, a number of systems analysts from another agency are assigned full-time in the reporting agency. The better the ratio, the faster is the EDP job accomplished. Singapore data processing personnel, numbering 18, are all classified as systems analysts, who must also be doing the programming job.

(b) Only 8 of the 15 countries having their own data processing personnel have in-house training programmes for their EDP personnel, and only two on a regular basis; in the other six with in-house training programmes, training is conducted as needed.

(c) Only 14 agencies have personnel trained locally, while a number in island countries (10) would have at most only 2 personnel trained locally or abroad.

/(d)

(d) Of seven agencies reporting having mainframe data editing packages, CONCOR is available in five while GENUPDATE, FILAN, UNEDIT and STG are available in only one agency each.

Of 12 reporting having tabulation packages COCENTS is available in four; CENTS 1.4 in also four; COXTALLY in three; TPL in two; and one each with Package X, FILETAB and GENTAB.

On DBMS, one agency each reported having IDMS, ADBS, IMS and RAPID.

On microcomputers 12 agencies reported having one or more. No particular make seem to be predominating. The number of agencies having IBM PC or XT are 3; Apple IIE, 2; Corona, 2; Mycron, Sord, Altos, ACS 800-7, Honeywell 6/10, Canon AS100, Apricot, one (1) each. No other microcomputer-based packages were mentioned, except DBASE II for DBMS in 2 agencies.

For government statistical services, efficiency of data processing systems can be relatively measured by the availability of editing, tabulating and data management packages and staff knowledgeable in their use. Only Indonesia and the Republic of Korea have all three packages.

7. (a) Total statistical workers are estimated at 71,400, of which India alone accounts for 56,400 (79.0 per cent). In statistical agencies, a total of 21,961 was estimated, of which Indonesia has the largest and accounts for 10,191 (46.4 per cent).

(b) Sixteen offices said they conducted statistical training, of which only 4 are on a regular basis and the other 12 are conducting training as needed; 5 said that such training included system analysis, programming and use of packages.

(c) Four of these offices have separate training units.

8. (a) Of the countries responding:

Seventeen had participated in SIAP General Courses;

Seventeen had participated in Advanced Courses;

Eighteen had participated in Country Courses.

Brunei Darussalam had participated in only one course; and two countries (Niue and Tuvalu) said they had not participated in any courses at all.

(b) Only three countries said they had adequate capability in training statisticians and might not need assistance, and the rest (19) might have capability but would find difficulty in training statisticians or did not have any capability at all and would need assistance.

/These

These numbers imply the almost total lack of local training opportunities for government statisticians.

(c) Have capability in training personnel in:

Statistical operations	9
Population/demographic statistics	8
ADP	6
Statistical methods	6
National accounting statistics	5
Economic statistics	5
Food and agricultural statistics	4

Except for one, or at most two, topics, capabilities in training of SIAP-type General Statistics Course are available in six countries or areas - Hong Kong, India, Indonesia, Nepal, Philippines and Singapore. The rest do not have capability in any topic at all.

(d) However, the number of countries with adequate trainers in specialized topics are as follows:

Population/demographic statistics	8
Statistical methods	7
Statistical operations	7
ADP	6
National accounting statistics	5
Economic statistics	5
Food and agricultural statistics	2

(e) Of the countries responding, the following is a distribution of interest in audio-visual material, by subject:
(A - keenly interested; B - interested; C - not interested;
D - no reply)

	A	B	C	D
Population/demographic statistics	11	7	2	2
National accounting statistics	12	7	1	2
Economic statistics	9	10	1	2
Food and agricultural statistics	6	7	3	6
Statistical methods	12	7	1	4
Statistical operations	10	9	1	2
ADP	14	6	1	1

/Only

Only Bhutan has no interest in training by audio-visual and Niue has no opinion. The ratios of those interested against no interest, range from 3.5:1 in population/demographic statistics to 10:1 in economic statistics. For keen interest versus no interest the ratios widen further, from 2:1 in food and agricultural statistics to 14:1 in ADP.

9. Only 13 of the 22 countries commented on the question of what SIAP might do to improve its current training programme/activities and to reach out to more statistical officers at all levels. These comments might be summarized as follows:

(a) Statistically more advanced countries tend to prefer the Advanced Course/Seminars to the General Course. They suggest training in more specialized topics (for example, environment, energy and water balances, and so on) and on new emerging issues and methods. New methods or new substantive areas of interest might include data processing and statistical analyses. Furthermore, they suggest that SIAP play a leading role in preparing material on different subjects, especially in audio-visual material for better assimilation and dissemination to countries. Since most of the topics covered in the General Course at SIAP, although applied in orientation, are available in their universities from where professional staff are recruited, the General Course is felt to be generally at a low level. While the course still serves a useful purpose, some resources could be directed to higher level training. One country felt that SIAP should offer advanced courses (even on advanced theory) of short duration, which universities in general might cover in longer durations of a year or two and thus cover a gap in the training of more senior statisticians.

(b) The less statistically developed countries want more training on methodology, of a more practical nature and more adaptable to local conditions and even of shorter duration. Training materials (audio-visual material or print) should be developed for dissemination to countries. Since lack of EDP specialists has been the perennial problem delaying the final processing of data, there are more requests for training in ADP and microcomputers, which should include utilization of available software.

(c) More country training of the trainer-type of courses are suggested - not only to meet considerable demands for training in large countries, but also in small countries which need the convenience of having minimum disruption of normal office functions as statistical officers, while undergoing training, are still able to return daily to their offices to perform their tasks.

/Appendix

Appendix

STATISTICAL INSTITUTE FOR ASIA AND THE PACIFIC
TOKYO

QUICK SURVEY OF STATISTICAL AND ADP TRAINING CAPABILITIES
OF GOVERNMENT STATISTICAL OFFICES IN
SELECTED COUNTRIES OF THE ESCAP REGION - 1985

Instructions: Please tick ☑ answers as appropriate. Will appreciate the return of this questionnaire to SIAP, either directly or through the local UNDP Office, before end of May 1985. Many thanks.

Name of Agency/Office: _____

Address: _____

_____

City: _____ Country: _____

Cable Address: _____ Telephone: _____

Prepared by: _____ Title/Position: _____

A. Statistical Organization and Operation

1. Would you classify your national statistical system as:

- ☐ Highly centralized (one agency doing most of major censuses and statistical surveys and processing)
- ☐ Centralized (one agency doing most major operations and a few doing other minor surveys/processing)
- ☐ Decentralized (many agencies doing censuses and major statistical surveys/processing)
- ☐ Highly decentralized with a strong coordinating body.

2. If your system is decentralized, please give names and addresses of two other agencies conducting major statistical operations or surveys:

(a) _____ (b) _____

_____ _____

_____ _____

_____ _____

3. Is your agency:

- ☐ Within the same ministry as the National Planning Office?
- ☐ Within the ministry other than where the National Planning Office is located? If so, what Office?

_____

- ☐ Neither? Please specify: _____

4. Your agency has major responsibilities/functions:

(a) in co-ordinating statistical activities of government:

- ☐ setting/formulating statistical standards
- ☐ collect information from other agencies for constructing:
  - ☐ national income accounts
  - ☐ inter-industry tables
  - ☐ food balance
  - ☐ balance of payments
  - ☐ other economic accounts
    Please specify: _____

    _____
- ☐ publishing these compiled statistics as well as those compiled by other agencies

/...

(b) in conducting national censuses: ☐ population ☐ housing
☐ agriculture ☐ economic
☐ others, please specify: _____

(c) in conducting national statistical surveys:

(i) on households, such as:

☐ labor force/employment
☐ income/expenditure
☐ cost of living
☐ fertility
☐ health
☐ education
☐ poverty
☐ agricultural/farm production (including fishing)
☐ other activities

Please specify:

_____
_____
_____
_____

(ii) on establishments, such as:

☐ industrial production
employment
☐ economic surveys
☐ others
Please specify:

_____
_____
_____
_____

(d) in processing administrative records and producing:

☐ foreign trade statistics
☐ vital statistics
☐ balance of payments statistics
☐ others, please specify: _____
_____

B. Data Processing Facilities, Personnel and Training

5. (a) Do you own or lease computer system(s) for:

☐ own sole use?
Please specify make(s), including size and number of terminals:

☐ sharing with other agencies?
Please specify make(s), including size and number of terminals:

(b) If you do not own or lease a computer system(s), do you usually process your survey or census:

☐ in a government central data processing centre?
please specify make(s):

☐ using private company arrangements by contract?

☐ using other arrangements?
please specify:

/....

(c) Does your agency own any micro computer? ☐ Yes ☐ No

If "Yes", how many? Please specify number and make(s):

6. (a) Do you have your own data processing personnel? ☐ Yes ☐ No

If "Yes", please specify number/type of EDP personnel (both regular and temporary or contract):

_____ System Analysts

_____ Programmers

_____ Others (exclude keying operators)

(b) Do you have an in-house training programme for your EDP personnel? ☐ Yes ☐ No

If "Yes", how often is this conducted?

☐ regularly, once a year. How long? _____ weeks

☐ regularly, every six months. How long? _____ weeks

☐ as needed

(c) How many of your personnel have been trained or are being trained:

☐ locally? _____ persons

☐ abroad? (not at SIAP) _____ persons

(d) Name some software packages commonly used in your EDP unit:

- Generalized data editing: _____ , _____ , _____

- Generalized tabulation: _____ , _____ , _____

- DBMS: _____ , _____ , _____

C. Statistical Personnel Training

7. (a) What is the estimated number of statistical personnel:

(i) in your agency?

Total: _____

of which _____ are in primary (such as field enumerators, statistical clerks, editors, etc.)

_____ intermediate (direct supervisors of primary workers)

_____ professional level (those doing statistical planning, training, research, analysis or management with many years of statistical training experience)

(ii) in your country?

Total: _____

of which _____ are in primary (such as field enumerators, statistical clerks, editors, etc.)

_____ intermediate (direct supervisors of primary workers)

_____ professional level (those doing statistical planning, training, research, analysis or management with many years of statistical training experience)

/....

(b) Do you conduct statistical training in your agency for your personnel? ☐ Yes ☐ No

If "Yes", how often conducted? ☐ regularly, once a year ☐ as needed

Does the statistical training include: - Systems design? .... ☐ Yes ☐ No
- Programming? ..... ☐ Yes ☐ No
- Use of ADP packages? ☐ Yes ☐ No

(c) Do you have a separate unit for conducting statistical training and/or ADP?
☐ Yes ☐ No

8. (a) Please estimate the number of your personnel who have:

(i) undergone SIAP training in the:

- General Course ..... _____
- Advanced Course/Seminar ..... _____
- Country Course ..... _____
- ADP Course for Statisticians ..... _____
- Software Demonstration and Training Centre _____
- Training of Trainers .....: _____

(ii) Abroad but not at SIAP: _____

(b) In your opinion, how adequate is the capability of your agency in training statisticians:

☐ adequate, may not need assistance; can assist other agencies

☐ adequate, may not need much assistance; but cannot assist other agencies in their training needs

☐ some difficulties, might need assistance

☐ poor, need assistance

(c) In your opinion, does your agency have the capability to train statistical personnel in:

- Population and Demographic Statistics and Analyses? ☐ Yes ☐ No
- National Income/Economic Accounting Statistics? ... ☐ Yes ☐ No
- Economic Statistics? ..... ☐ Yes ☐ No
- Food & Agricultural Statistics? ..... ☐ Yes ☐ No
- Statistical Methods and Sampling Methods? ..... ☐ Yes ☐ No
- Statistical Operations? ..... ☐ Yes ☐ No
- Automatic Data Processing ..... ☐ Yes ☐ No
- Others, please specify:

(d) Do you have an adequate number of trainers amongst your staff who can teach/train in:

- Population and Demographic Statistics and Analyses? ☐ Yes ☐ No
- National Income/Economic Accounting Statistics? ... ☐ Yes ☐ No
- Economic Statistics? ..... ☐ Yes ☐ No
- Food & Agricultural Statistics? ..... ☐ Yes ☐ No
- Statistical Methods and Sampling Methods? ..... ☐ Yes ☐ No
- Statistical Operations? ..... ☐ Yes ☐ No
- Automatic Data Processing ..... ☐ Yes ☐ No
- Others, please specify:

(e) Will you be interested in conducting statistical/ADP training by audio/video in those topics?

- Population and Demographic Statistics and Analyses?
  ☐ Keenly interested ☐ Interested ☐ Not interested
- National Income/Economic Accounting Statistics?
  ☐ Keenly interested ☐ Interested ☐ Not interested
- Economic Statistics?
  ☐ Keenly interested ☐ Interested ☐ Not interested
- Food & Agricultural Statistics?
  ☐ Keenly interested ☐ Interested ☐ Not interested
- Statistical Methods and Sampling Methods?
  ☐ Keenly interested ☐ Interested ☐ Not interested
- Statistical Operations?
  ☐ Keenly interested ☐ Interested ☐ Not interested
- Automatic Data Process ng?
  ☐ Keenly interested ☐ Interested ☐ Not interested

(f) Are there universities/institutions that offer courses/training in statistics?

☐ Yes ☐ No

If "Yes", are the courses: - for undergraduate programmes? ☐ Yes ☐ No
(Please obtain brochures for SIAP) - for graduate programmes? ☐ Yes ☐ No

(g) Are university lecturers utilized in your statistical training programmes?

☐ Yes ☐ No

If "Yes", which programmes? _____

(h) How keen or interested are you in having agreements between your agency and a university/institution on collaborating in statistical training?

☐ Keenly interested ☐ Interested ☐ Not interested

(i) If you are keenly interested or even just interested, do you think it worthwhile for SIAP also to establish link with a university/institution in your country?

☐ Yes ☐ No

If "Yes", please write the name(s) and address(es) [of the person(s) to be contacted]:

(1) Name & Title: _____
Is he/she: ☐ keenly interested ☐ interested ☐ not interested
Institution: _____
Address: _____
_____
_____

(2) Name & Title: _____
Is he/she: ☐ keenly interested ☐ interested ☐ not interested
Institution: _____
Address: _____
_____
_____

/....

9. Please comment (use additional pages if necessary):

(a) on the general state of training and university education in statistics and ADP in your country [please send some copies of your training materials to SIAP];

(b) on capability of the research unit of your agency to conduct methodological research and/or studies on population (demographic analysis and projection) and the economy; and

(b) on what SIAP might do to improve its current training programme/activities and to reach out to more statistical officers at all levels.

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